

REMARKS

Claims 9-14 and 27-36 are all the claims pending in the application. This Amendment amends claims 9, 12, 27, and 30, adds claims 33-36, and addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

To confirm that the Examiner has considered the disclosed references, **Applicant requests that the Examiner acknowledge the Information Disclosure Statement filed March 4, 2004** with the RCE.

Claim Objections

Claims 9-14 are objected to because “Current narrowing structure is not proper language. It is suggested to replace ‘narrowing’ with ‘confining’.”

Applicant thanks the Examiner for the suggested change, but respectfully submits that “current narrowing” is a “term of art” which conveys meaning and is readily understandable in the light-emitting device semiconductor arts.

While an applicant may be his or her own lexicographer (MPEP § 2111.01), the term “current narrowing structure” as used in the present application and claims is used to convey ordinary meaning. As explained in the specification (*e.g.*, page 6, lines 17-23; page 7, lines 10-12), a current narrowing structure is a structure that narrows the current (*i.e.*, the current path) in a device.

To demonstrate that “current narrowing” is an established term of art, Applicant cites the following (non-exhaustive) sampling of U.S. Patent references for the Examiner’s consideration:

- U.S. Patent 4,675,074 to Wada *et al.*, published June 23, 1987. *See, e.g.*, column 6, line 43 (“An n-type GaAs current narrowing layer 202”) and Figure 10(d).
- U.S. Patent 4,706,101 to Nakamura *et al.*, published November 10, 1987. *See e.g.*, column 2, line 2 (“a current narrowing structure”); Figure 1 and column 3, lines 54-56 (“Reference numeral 16 shows a contact metal layer of AuZn and 17 shows an SiO₂ layer, these layers constituting a current narrowing structure”).
- U.S. Patent 4,725,450 to Kokubo *et al.*, published February 16, 1988. *See, e.g.*, Abstract (“a current narrowing layer”); Figure 2C and column 2, line 35 to column 3, line 12 (“a first semiconductor layer 20 of N type GaAs to be a current narrowing layer... the current over the active layer 50 flows only along the proximity of the portion where the current narrowing layer breaks”).
- U.S. Patent 4,835,783 to Suyama *et al.*, published May 30, 1989. *See, e.g.*, column 1, lines 66-67 (“n-type GaAs current narrowing layer 25”); column 2, line 40 (“current narrowing layer 45”).
- U.S. Patent 4,856,015 to Matsui *et al.*, published August 8, 1989. *See, e.g.*, column 1, lines 28-29 (“a current-narrowing layer 82 of n-type GaAs”); column 4, line 66 (“a current-narrowing layer 53 of a SiN₄ ire Si₃N₄ film”).
- U.S. Patent 5,058,120 to Nitta *et al.*, published October 15, 1991. *See, e.g.*, column 4, lines 17-18 and Figure 1F (“current narrowing layer 24a”); column 4, lines 56-57 (“current narrowing layer 24”).

- U.S. Patent 5,157,679 to Kondow *et al.*, published October 20, 1992. *See, e.g.*, column 10, lines 56-57 and Figure 10 (“SiO₂ current-narrowing film 6”).
- U.S. Patent 5,299,217 to Migata *et al.*, published March 29, 1994. *See, e.g.*, column 3, lines 21-23 (“FIG. 4 is a cross-sectional view of one example of [a] semiconductor laser having a double-hetero structure with a current narrowing structure”); column 6, lines 24-25 (“a current narrowing structure”); column 6, line 66 (“an insulating structure for current narrowing 14”); column 7, lines 27-30 (“the same effects could be obtained when n-type ZnS_{0.08}Se_{0.92} (having an opposed conductivity) was used in place of SiO₂ (as a current narrowing layer)”).
- U.S. Patent 5,321,712 to Itaya *et al.*, published June 14, 1994. *See, e.g.*, column 5, lines 27-36 (“Current narrowing in the semiconductor device ... thereby narrowing the current”); column 7, line 35 and Figure 5 (“An n-type GaAs current narrowing layer 39”); column 8, lines 7-8 and Figure 6 (“a current narrowing layer 59 constituted by n-type GaAs and having a stripe opening”); claims 5, 6, 12, 13, 20, 21, 28, and 29 (“a current narrowing layer of said first conductivity type”).
- U.S. Patent 5,732,099 to Kawasumi *et al.*, published March 24, 1998. *See, e.g.*, column 1, lines 56-57 (“a current narrowed structure”); column 2, line 22 (“efficiently narrowing the current”); column 5, lines 65-67 (“a p-type GaAs current block layer 2 doped with an acceptor impurity, i.e., Zn, stacked on the GaAs substrate 1 to form a current narrowing structure”).

As “a current narrowing structure” appeared in the claims as originally filed and is used throughout the present specification, and in view of the above examples demonstrating that “current narrowing” is a term that is well established in the art, Applicant respectfully requests reconsideration and withdrawal of the objection.

Allowable Claims

Applicant appreciates the indication that claims 12-14 and 30-32 would be allowed if rewritten in independent form. Applicant requests that the rewriting of claims 12-14 and 30-32 be held in abeyance until the Examiner has had the opportunity to reconsider the allowability of parent claims 9 and 27, in view of the amendments discussed below.

Claim Rejections - 35 U.S.C. § 103(a)

Claims 9-11 and 27-29 are rejected as unpatentable over Kamiyama in combination with Sverdlov.

Applicant respectfully submits that the features of Kamiyama and Sverdlov cited by the Examiner neither teach nor suggest the forming of a current narrowing structure or a structure confining light. To further distinguish independent claims 9 and 27, Applicant has amended independent claims 9 and 27 to recite “forming at least a first nitride-based semiconductor layer, including an active layer of said nitride-based semiconductor light emitting device.” Therefore, as amended, the mask is formed after the active layer, rather than before.

Applicant submits that this is neither taught nor suggested by the applied references. While minimizing dislocations in layers underlying the active region in the applied art may improve the performance of the active layer by minimizing optical defects in the active layer

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itself, it does not follow from the prior art that there would be any benefit to forming a masking *after* formation of the active layer.


New Claims

Applicant adds new dependent claims 33-36. No new matter is added.

In view of the above, reconsideration of this application is now believed to be in order, and such actions is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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